

0590
2/11/2

ENTERED



OIPE

RAW SEQUENCE LISTING

DATE: 11/12/2002

PATENT APPLICATION: US/09/891,865A

TIME: 08:07:31

Input Set : A:\Norph11.app

Output Set: N:\CRF4\11122002\I891865A.raw

```

3 <110> APPLICANT: NORPHARMA SPA
5 <120> TITLE OF INVENTION: Recombinant bacterial strains for the production of
6   natural nucleosides and modified analogues thereof
8 <130> FILE REFERENCE: 99DC26E
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/891,865A
C--> 11 <141> CURRENT FILING DATE: 2002-06-25
13 <150> PRIOR APPLICATION NUMBER: MI98A002792
14 <151> PRIOR FILING DATE: 1998-12-23
16 <160> NUMBER OF SEQ ID NOS: 15
18 <170> SOFTWARE: PatentIn Ver. 2.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 3444
22 <212> TYPE: DNA
23 <213> ORGANISM: Artificial Sequence
25 <220> FEATURE:
26 <223> OTHER INFORMATION: Description of Artificial Sequence: Plasmid
28 <220> FEATURE:
29 <221> NAME/KEY: gene
30 <222> LOCATION: (243)..(1021)
31 <223> OTHER INFORMATION: udp
33 <400> SEQUENCE: 1
34 gcgcaccaata cgcaaacgcg ctctccccgc gcgttgccgc attcattaat gcagctggca 60
35 cgacagggttt cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagttagct 120
36 cactcattag gcaccccagg ctttacactt tatgcttcgc gctcgtatgt tgtgtggaat 180
37 tgtgagcgga taacaatttc acacaggaaa cagctatgac catgattaag aattcgagct 240
38 cgggtaccatc catgtccaag tctgatgttt ttcatctcgg cctcactaaa aacgatttac 300
39 aaggggctac gcttgccatc gtccctggcg acccggatcg tgtggaaaag atcgccgcgc 360
40 tgatggataa gccggttaag ctggcatctc accgcgaatt cactacctgg cgtgcagagc 420
41 tggatggtaa acctgtttat gtctgtctta ccggtatcgg cggcccgtct acctctattg 480
42 ctgttggaaga gctggcacag ctgggcattc gcaccttctt gcgtatcggg acaacgggcg 540
43 ctattcagcc gcatattaat gtgggtgatg tcttggttac cacggcgtct gtccgtcttg 600
44 atgggcgcgag cctgcacttc gcaccgctgg aattcccggc tgtcgtgatg ttcgaaatgta 660
45 cgaactgcgct ggttgaagct gcgaaatcca ttggcgcgac aactcacgtt ggcgtgacag 720
46 cttcttctga taccttctac ccaggtcagg aacggttacga tacttaactt ggtcgcgtag 780
47 ttctgtcact taaaggttct atggaagagt ggcaggcgat gggcgtaatg aactatgaaa 840
48 tggaatctgc aacctgtctg accatgtgtg caagtcaggg cctgcgtgcc ggtatggtag 900
49 cgggtgttat cgttaaccgc acccagcaag agatcccga a tgcgtgagac atgaaacaaa 960
50 ccgaaagcca tgcggtgaaa atcgtggtgg aagcgggcgc tgcgtctgct taattctctt 1020
51 gtgcacctgc aggcattgca gcttggcact ggccgtcgtt ttacaacgtc gtgactggga 1080
52 aaacctgggc gttaccgaac ttaatgcctt tgcagcacat ccccttttcg ccagctggcg 1140
53 taatagcgaa gaggcgcgca ccgatcgccc ttcccaacag ttgcgcagcc tgaatggcga 1200
54 atggcgctg atgcggtatt ttctccttac gcattctgtg ggtatttcac accgcatatg 1260
55 gtgcactctc agtacaatct gctctgatgc cgcatagtta agccagcccc gacaccgcgc 1320

```

RAW SEQUENCE LISTING

DATE: 11/12/2002

PATENT APPLICATION: US/09/891,865A

TIME: 08:07:31

Input Set : A:\Norph11.app

Output Set: N:\CRF4\11122002\I891865A.raw

```

56 aacacccgct gacgcgccect gacgggcttg tctgctcccg gcatccgctt acagacaagc 1380
57 tgtgaccgtc tccgggagct gcatgtgtca gaggttttca ccgtcatcac cgaaacgcgc 1440
58 gagacgaaag ggccctcgtga tacgcctatt tttatagggt aatgtcatga taataatggt 1500
59 ttcttagacg tcagggtggca cttttcgggg aaatgtgcgc ggaaccccta tttgtttatt 1560
60 ttctaaata cattcaaata tgtatccgct catgagacaa taacctgat aaatgcttca 1620
61 ataattattga aaaaggaaga gtatgagtat tcaacatttc cgtgtcgccc ttattccctt 1680
62 ttttgccgca ttttgccctc ctgtttttgc tcaccacagaa acgctgggtga aagtaaaaga 1740
63 tgotgaagat cagttgggtg cacgagtggg ttacatcgaa ctggatctca acagcggtaa 1800
64 gatccttgag agttttcgcc ccgaagaacg ttttccaatg atgagcactt ttaaagtctt 1860
65 gctatgtggc gcggtattat cccgtattga cgccgggcaa gagcaactcg gtcgccgcat 1920
66 aactattctt cagaatgact tgggtgagta ctaccagtc acagaaaagc atcttacgga 1980
67 tggcatgaca gtaagagaat tatgcagtgc tgccataacc atgagtgata aactgcggc 2040
68 caacttactt ctgacaacga tcggaggacc gaaggagcta accgcttttt tgcacaacat 2100
69 gggggatcat gtaactcgcc ttgatcgttg ggaaccggag ctgaatgaag ccataccaaa 2160
70 cgacgagcgt gacaccacga tgcctgtagc aatggcaaca acgttgcgca aactattaac 2220
71 tggcgaacta ctactctag ctcccgcca acaattaata gactggatgg aggcggataa 2280
72 agttgcagga ccacttctgc gctcgccct tccggctggc tggtttattg ctgataaatc 2340
73 tggagccggt gacgctgggt ctgcgggtat cattgcagca ctggggccag atggtaagcc 2400
74 ctcccgatc gtatgtatct acacgacggg gtagtcaggc actatggatg aacgaaatag 2460
75 acagatcgct gagatagggt cctcactgat taagcattgg taactgtcag accaagttaa 2520
76 ctcatatata cttagattg atttaaaact tcatttttaa tttaaaagga tctaggtgaa 2580
77 gatccttttt gataatctca tgaccaaaat cccttaacgt gagttttcgt tccactgagc 2640
78 gtcagacccc gtagaaaaga tcaaaggatc ttcttgagat ctttttttcc tgcgcgtaat 2700
79 ctgctgcttg caaacaaaaa aaccaccgct accagcggtg gtttgtttgc cggatcaaga 2760
80 gctaccaact ctttttccga aggttaactg cttcagcaga gcgcagatac caaatactgt 2820
81 ccttctagtg tagccttagt taggccacca cttcaagaac tctgtagcac cgcctacata 2880
82 cctcgctctg ctaatcctgt taccagtggc tgctgccagt ggcgataagt cgtgtcttac 2940
83 cgggttgga ctaagacgat agttaccgga taaggcgcag cggtcgggct gaacgggggg 3000
84 ttctgtgaca cagccagct tggagcgaac gacctacacc gaactgagat acctacagcg 3060
85 tgagctatga gaaagcgcca cgcttcccga agggagaaaag gcggacaggt atccggtaag 3120
86 cggcagggtc ggaacaggag agcgcacgag ggagcttcca gggggaaaac cctggtatct 3180
87 ttatagtcct gtcgggttcc gccacctctg acttgagcgt cgatttttgt gatgctctgc 3240
88 agggggggcg agcctatgga aaaacgccag caacgcggcc tttttaaggc tccctggcctt 3300
89 ttgttgccct tttgtcaca tgttctttcc tgcgttatcc cctgattctg tggataaccg 3360
90 tattaccgcc tttgagttag ctgataccgc tcgccgcagc cgaacgaccg agcgcagcga 3420
91 gtcagtgagc gaggaagcgg aaga 3444

```

94 <210> SEQ ID NO: 2

95 <211> LENGTH: 5556

96 <212> TYPE: DNA

97 <213> ORGANISM: Artificial Sequence

99 <220> FEATURE:

100 <223> OTHER INFORMATION: Description of Artificial Sequence: Plasmid

102 <220> FEATURE:

103 <221> NAME/KEY: gene

104 <222> LOCATION: (243)..(1021)

105 <223> OTHER INFORMATION: udp

107 <220> FEATURE:

108 <221> NAME/KEY: gene

109 <222> LOCATION: (1483)..(2883)

RAW SEQUENCE LISTING

DATE: 11/12/2002

PATENT APPLICATION: US/09/891,865A

TIME: 08:07:31

Input Set : A:\Norph11.app

Output Set: N:\CRF4\11122002\I891865A.raw

110 <223> OTHER INFORMATION: tetracycline resistance

112 <400> SEQUENCE: 2

```

113 gcgcccataa cgcaaacgc ctctccccgc gcgttgccgc attcattaat gcagctggca 60
114 cgacagggtt cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagtttagct 120
115 cactcattag gcaccccagg ctttacactt tatgcttcgc gctcgtatgt tgtgtggaat 180
116 tgtgagcgga taacaatttc acacaggaaa cagctatgac catgattacg aattcgagct 240
117 cggtagccat catgtccaag tctgatgttt ttcattctcg cctcactaaa aacgatttac 300
118 aaggggctac gcttgccatc gtccctggcg acccggatcg tgtgaaaaag atcgccgcgc 360
119 tgatggataa gccggttaag ctggcatctc acccggaatt cactacctgg cgtgcagagc 420
120 tggatggtaa acctgttatc gtctgtctta ccggtatcgg cggcccgctc acctctattg 480
121 ctgttgaaag gctggcacag ctgggcattc gcaccttcct gcgtatcggg acaacgggcg 540
122 ctattcagcc gcatattaat gtgggtgatg tctgtgttac cacggcgtct gtccgtctgg 600
123 atggcgcgag cctgcacttc gcaccgctgg aattcccggc tgtcgtgat ttcgaatgta 660
124 cgactgcgct ggttgaaagt gcgaaatcca ttggcgcgac aactcacgtt ggcgtgacag 720
125 cttctcttga tactttctac ccaggtcagg aacgttacga tacttactct ggtcgcgtag 780
126 ttcgtaactt taaagggtct atggaagagt ggcaggcgat gggcgtaatg aactatgaaa 840
127 tggaaatctg aacctgtctg accatgtgtg caagtcaggg cctgcgtgcc ggtatggtag 900
128 cgggtgttat cgttaacgcg acccagcaag agatcccga tgcgtgagac atgaaacaaa 960
129 ccgaaagcca tgcgggtgaa atcggtgtgg aagcggcgcg tcgtctgctg taattctctt 1020
130 gtgcacctgc aggcattgca gctttatgct tgtaaacctg tttgtgaaaa aatttttaaa 1080
131 ataaaaaagg ggacctctag ggtccccaat taattagtaa tataatctat taaaggctcat 1140
132 tcaaaaaggtc atccacggga tcagcttagt aaagccctcg ctgattttta atgcggatgt 1200
133 ttggaattact tggccaacta ttgcgataac aagaaaaagc cagcctttca tgatatatct 1260
134 cccaatttgt gtagggttta ttatgcacgc ttaaaaaata taaaagcaga cttgacctga 1320
135 tagtttggtc gtgagcaatt atgtgcttag tgcattctaa cgttgagtta agccgcgcgc 1380
136 cgaagcggcg tcggcttgaa cgaattgtta gacattatct gccgactacc ttggtgatct 1440
137 cgcctttcac gtagtggaac aattcttcca actgatctgc gcgcgagat gcgcgcgctg 1500
138 cggctgctgg agatggcgga cgcgatggat atgttctgcc aagggttggt ttgcgcattc 1560
139 acagttctcc gcaagaattg attggctcca attcttgagg tgggtaatcc gttagcgagg 1620
140 tgcgcgcgcg ttcatttcag gtcgaggtgg ccgcgctcca tgcacgcgca cgcaacgcgc 1680
141 ggaggcagac aaggtatagg gcgcgcctca caatccatgc caaccgctc catgtgctcg 1740
142 ccgaggcggc ataaatcgcc gtgacgatca gcggtccagt gatcgaagtt aggctggtta 1800
143 ggcgcgcgag cgatccttga agctgtccct gatggtcgtc atctacctgc ctggacagca 1860
144 tggcctgcaa cgcgggcctc ccgatgcgcg cggaagcgag aagaatcata atggggaagg 1920
145 ccataccagc tcgcgtcgcg aacgccagca agacgtagcc cagcgcgctc gccgccatgc 1980
146 cggcgataat ggctgtcttc tcgcgaaac gtttggtggc gggaccagtg acgaaggctt 2040
147 gagcgagggc gtgcaagatt ccgaataccg caagcgacag gccgatcctc gtcgcgctcc 2100
148 agcgaaaagc gtcctcgccg aaaatgacct agagcgctgc cggcacctgt cctacgagtt 2160
149 gcatgataaa gaagacagtc ataagtgcgg cgacgatagt catgccccgc gccaccgga 2220
150 aggagctgac tgggttgaa gctctcaagg gcacgggtcg acgtctctcc ttatgcgact 2280
151 cctgcattag gaagcagccc agtagtaggt tgaggccgtt gagcaccgcc gccgcaagg 2340
152 atggtgcatg caaggagatg gcgcccacaa gtcccccgcc caggggcctt gccaccatac 2400
153 ccacgcgcga acaagcgctc atgagccgga agtggcgagc ccgatcttcc ccatacgtga 2460
154 tgtcggcgat ataggcgcca gcaaccgcac ctgtggcgcc ggtgatgcgc gccacgatgc 2520
155 gtccggcgta gaggatccac aggacgggtg tggtcgccat gatcgcgtag tcgatagtgg 2580
156 ctccaagtat cgaagcgagc aggactgggc ggcgccaaa gcggtcggac agtgctccga 2640
157 gaaagggtgc gcatagaaat tgcattcaac catatagcgc tagcagcacg ccatagtgac 2700
158 tggcgatgct gtcggaatgg acgatatccc gcaagaggcc cggcagtagc ggcataacca 2760
159 agcctatgcc tacagcatcc aggggtgacg tgccgaggat gacgatgagc gcattgttag 2820

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/891,865A

DATE: 11/12/2002
TIME: 08:07:31

Input Set : A:\Norph11.app
Output Set: N:\CRF4\11122002\I891865A.raw

```

160 atttcataca cgggtgcctga ctgcggttagc aattttaactg tgataaacta ccgcattaaa 2880
161 gctcatgcgg atcagtgagg gtttgcaact gcgggtcaag gatctggatt tcgatcacgg 2940
162 caogatcatc gtgcgggagg gcaaggggctc caaggatcgg gccttgatgt tacccgagag 3000
163 cttggcacc cgcctgcgcg agcaggggaa ttgatccggg ggatgacctt ttgaatgacc 3060
164 tttaatagat tatattacta attaattggg gaccctagag gtccctttt ttattttaaa 3120
165 aattttttca caaaacggtt tacaagcata aagcttgga ctggccgtcg ttttacaacg 3180
166 tcgtgactgg gaaaacctg gcgttaccca acttaatcgc cttgcagcac atcccccttt 3240
167 cgccagctgg cgtaatagcg aagaggcccg cccgatcgc cttcccaac agttgcgcag 3300
168 cctgaatggc gaatggcgcc tgatgcggta ttttctcctt acgcatctgt gcggtatttc 3360
169 acaccgcata tgggtgcactc tcagtacaat ctgctctgat gccgcatagt taagccagcc 3420
170 ccgacacccg ccaacacccg ctgacgcgc ctagcgggct tgtctgtccc cggcatccgc 3480
171 ttacagacaa gctgtgaccg tctccgggag ctgcatgtgt cagaggtttt caccgtcatc 3540
172 accgaaacgc gcgagacgaa agggcctcgt gatacgccta tttttatagg ttaatgtcat 3600
173 gataataatg gtttcttaga cgtcagggtg cacttttcgg ggaaatgtgc gcggaacccc 3660
174 tattttgtta tttttctaaa tacattcaaa tatgtatccg ctcgatgagac aataaccttg 3720
175 ataaatgctt caataatatt gaaaaaggaa gagtatgagt attcaacatt tccgtgtcgc 3780
176 ccttattccc ttttttgccg cattttgcct tctgttttt gctcaccag aaacgctggt 3840
177 gaaagtaaaa gatgctgaag atcagttggg tgcacgagtg ggttacatcg aactggatct 3900
178 caacagcggg aagatccttg agagttttcg ccccgagaa cgttttccaa tgatgagcac 3960
179 ttttaaagtt ctgctatgtg gcgcggtatt atcccgatt gacgcggggc aagagcaact 4020
180 cggctgcggc atacactatt ctccagaatga cttggttgag tactaccag tcacagaaaa 4080
181 gnatcttacg gatggcatga cagtaagaga attatgcagt gctgccataa ccatgagtga 4140
182 taacactgcg gccaaacttac ttctgacaa ctagcgagga ccgaaggagc taaccgcttt 4200
183 tttgcacaac atgggggcatc atgtaactcg ccttgatcgt tgggaaccgg agctgaatga 4260
184 agccatacca aacgacgagc gtgacaccac gatgcctgta gcaatggcaa caacgttgcg 4320
185 caaactatta actggcgaa cacttactct agcttcccgg caacaattaa tagactggat 4380
186 ggaaggcggg aaagttgcag gaccacttct gcgctcgccc cttccggctg gctggtttat 4440
187 tgotgataaa tctggagccg gtgagcgtgg gtctcgcggt atcattgcag cactggggcc 4500
188 agatggtaag cctcccgta tcgtagttat ctacacgacg gggagtcagg caactatgga 4560
189 tgaacgaaat agacagatcg ctgagatagg tgccctactg attaagcatt ggtaactgtc 4620
190 agaccaagtt tactcatata tacttttagat tgatttaaaa cttcattttt aattttaaaag 4680
191 gatctaggtg aagatccttt ttgataatct catgaccaa atcccttaac gtgagttttc 4740
192 gttccactga gcgtcagacc ccgtagaaaa gatcaaagga tcttcttgag atcctttttt 4800
193 tctgcgcgta atctgctgct tgcaaaacaaa aaaaccaccg ctaccagcgg tggtttgttt 4860
194 ggcggatcaa gagctaccaa ctcttttttc gaaggtaact ggcttcagca gagcgagat 4920
195 accaaatact gtcttcttag tgtagccgta gttaggccac cacttcaaga actctgtagc 4980
196 accgcctaca tacctcgctc tgctaatoct gttaccagtg gctgctgcca gtggcgataa 5040
197 gtcgtgtctt accgggttg actcaagacg atagttaccg gataaggcgc agcggtcggg 5100
198 ctgaacgggg ggttcgtgca cacagcccag cttggagcga acgacctaca ccgaactgag 5160
199 atacctacag cgtgagctat gagaaagcgc cacgcttccc gaaggagaa aggcggacag 5220
200 gtatccggta agcggcaggg tcggaacagg agagcgcac agggagcttc cagggggaaa 5280
201 cgcctgggat ctttatagtc ctgtcgggtt tgcacacctc tgacttgagc gtcgattttt 5340
202 gtgatgctcg tcaggggggc ggagcctatg gaaaaacgcc agcaacgcgg cttttttacg 5400
203 gttcctggcc ttttgcgtgg cttttgctca catgttcttt cctgcgttat cccctgattc 5460
204 tgtggataac cgtattaccg ctttgagtg agctgatacc gctcgccgca gccgaacgac 5520
205 cgagcgcagc gagtcagtga gcgaggaagc ggaaga 5556
208 <210> SEQ ID NO: 3
209 <211> LENGTH: 3383
210 <212> TYPE: DNA

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/891,865A

DATE: 11/12/2002
TIME: 08:07:31

Input Set : A:\Norph11.app
Output Set: N:\CRF4\11122002\I891865A.raw

```

211 <213> ORGANISM: Artificial Sequence
213 <220> FEATURE:
214 <223> OTHER INFORMATION: Description of Artificial Sequence: Plasmid
216 <220> FEATURE:
217 <221> NAME/KEY: gene
218 <222> LOCATION: (231)..(960)
219 <223> OTHER INFORMATION: deod
221 <400> SEQUENCE: 3
222 ggcgcacaata cgcaaacccgc ctctccccgc gcgttgccgc attcattaat gcagctggca 60
223 cgacagggttt cccgactgga aagcgggcag tgagcgcaac gcaattaatg tgagttagct 120
224 cactcattag gcacccagg ctttacactt tatgcttcgc gctcgtatgt tgtgtggaat 180
225 tgtgagcgga taacaatttc acacaggaaa cagctatgac catgattacg aattcttcca 240
226 tggctacccc acacattaat gcagaaatgg gcgatttcgc tgacgtagtt ttgatgccag 300
227 ggcacccgct gcgtgcgaag tatattgctg aaactttcct tgaagatgcc cgtgaagtga 360
228 acaacggttg cggtatgctg ggcttcaccg gtacttacia aggcgcgaaa atttccgtaa 420
229 tgggtcacgg tatgggtatc ccgtcctgct ccactacac caaagaactg atcacccgatt 480
230 tcggcgtgaa gaaaattatc cgcgtgggtt cctgtggcgc agttctgccg cacgtaaac 540
231 tgcgcgacgt cgttatcggt atgggtgcct gcaccgatcc caaagttaac cgcacccggt 600
232 ttaaagacca tgactttgcc gctatcgctg acttcgacat ggtgcgtaac gcagtagatg 660
233 cagctaaagc actgggtatt gatgctcgcg tgggtaacct gttctccgct gacctgttct 720
234 actctccgga cggcgaaatg ttcgacgtga tggaaaaata cggcattctc ggctgggaaa 780
235 tggaaaggcc tggatatctac ggctcgtcgt cagaatttgg cgcgaaagcc ctgaccatct 840
236 gcacccgtatc tgaccacatc cgcactcac agcagaccac tgccgctgag cgtcagacta 900
237 ccttcaacga catgatcaaa atcgactgg aatccgttct gctgggcatg aaagagtaag 960
238 tcgacctgca ggcattgcaag cttggcactg gccgtcggtt tacaacgtcg tgactgggaa 1020
239 aacctggcg ttacccaact taatcgctt gcagcacatc cccctttcgc cagctggcgt 1080
240 aatagcgaa aggcgcgcac cgatcgccct tcccaacagt tgcgcagcct gaatggcgaa 1140
241 tggcgccgtga tgcgggtattt tctccttacg catctgtgag gtatttcaca ccgcatatgg 1200
242 tgcactctca gtacaatctg ctctgatgcc gcatagttaa gccagccccg acaccgcgca 1260
243 acaccgctg acgcgcctg acgggcttgt ctgctcccg catccgctta cagacaagct 1320
244 gtgaccgtct ccgggagctg catgtgtcag aggttttcac cgtcatcacc gaaacgcgcg 1380
245 agacgaaagg gcctcgtgat acgcctatct ttataggtta atgtcatgat aataatggtt 1440
246 tcttagacgt cagggtggcag ttttcgggga aatgtgcgcg gaacccttat ttgtttattt 1500
247 ttctaaatac attcaaatat gtatccgctc atgagacaat aacctgata aatgcttcaa 1560
248 taatattgaa aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt 1620
249 tttgcggcat tttgccttcc tgtttttgct caccagaaa cgctgggtgaa agtaaaagat 1680
250 gotgaagatc agttgggtgc acgagtgggt tacatcgaa tggatctcaa cagcggtaag 1740
251 atccttgaga gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagtctctg 1800
252 ctatgtggcg cggattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata 1860
253 cactattctc agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat 1920
254 ggcattgacg taagagaatt atgcagtgt gccataacca tgagtataa cactgcggcc 1980
255 aacttacttc tgacaacgat cggaggaccg aaggagctaa ccgctttttt gcacaacatg 2040
256 ggggatcatg taactcgct tgatcgttg gaaccggagc tgaatgaagc cataccaaac 2100
257 gacgagcgtg acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact 2160
258 ggcgaactac ttactctagc ttcccgcaa caattaatag actggatgga ggcggataaa 2220
259 gttgcaggac cacttctgct ctcggccctt ccggttggtt ggtttattgc tgataaatct 2280
260 ggagccgggt agcgtgggtc tcgcggtatc attgcagcac tggggccaga tggtaagccc 2340
261 tcggtatcgt tagttatcta cagcagggg agtcaggcaa ctatggatga acgaaataga 2400
262 cagatcgctg agataggtgc ctactgatt aagcattggt aactgtcaga ccaagtttac 2460

```

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/891,865A

DATE: 11/12/2002

TIME: 08:07:32

Input Set : A:\Norph11.app

Output Set: N:\CRF4\11122002\I891865A.raw

L:10 M:270 C: Current Application Number differs, Replaced Current Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date